The Drought: May *1998 - ???*

A Limited Shared Resource With Supply Issues

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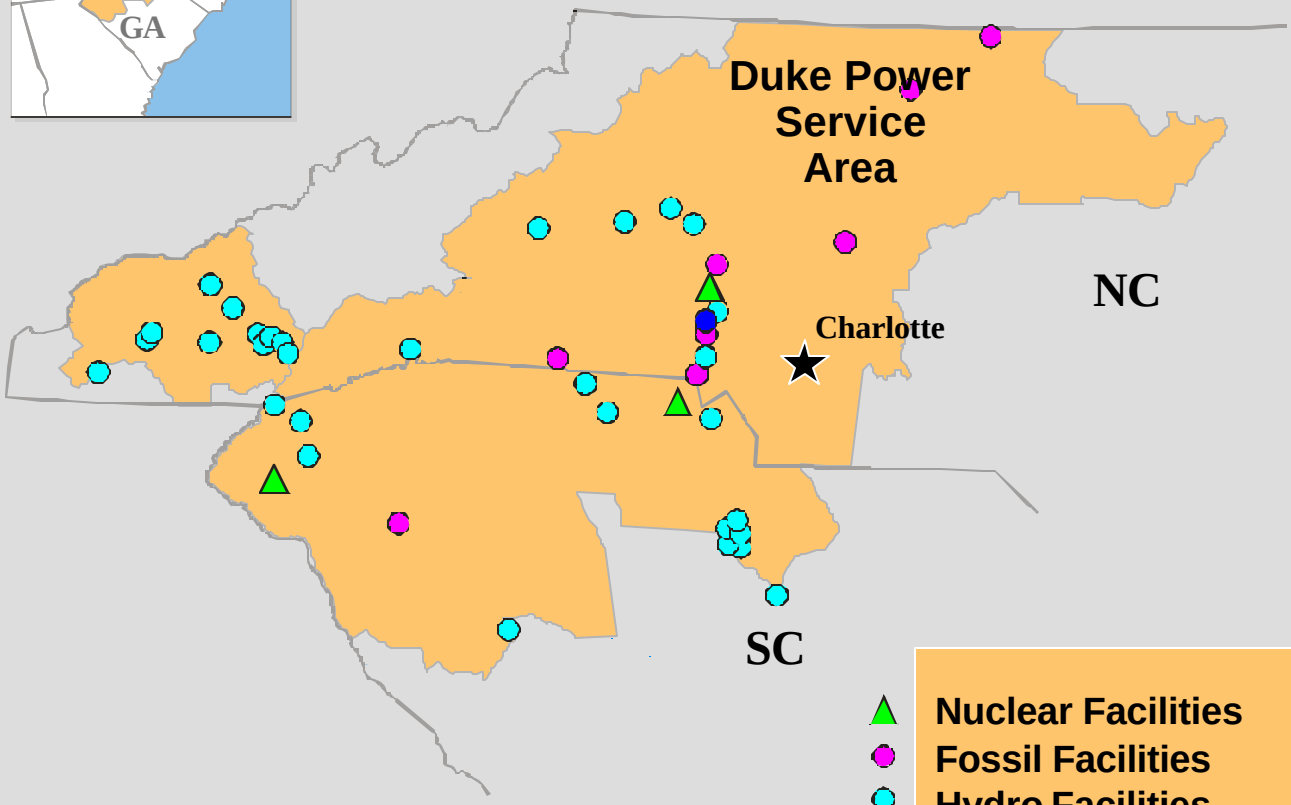
ISSUES

- We can manage but Nature has the control!
  - We have some control over some of the variables but not all
- David and Goliath
  - Matter of perspective, most users think we are Goliath. From my view we are closer to David with no control over when, where or how often it will rain enough to replenish our storage.
- Limited supply plus the water balance equation
  - Water in/water out while meeting all needs daily and annually
- Public perception of unlimited supply and basic rights

Duke Power Assets



Duke Power serves roughly 2 million customers

It operates:

3 Nuclear Stations

8 coal-fired stations

31 hydroelectric stations

39 Combustion Turbine Units

Total system capability – 20,000+ megawatts

Managing the Drought

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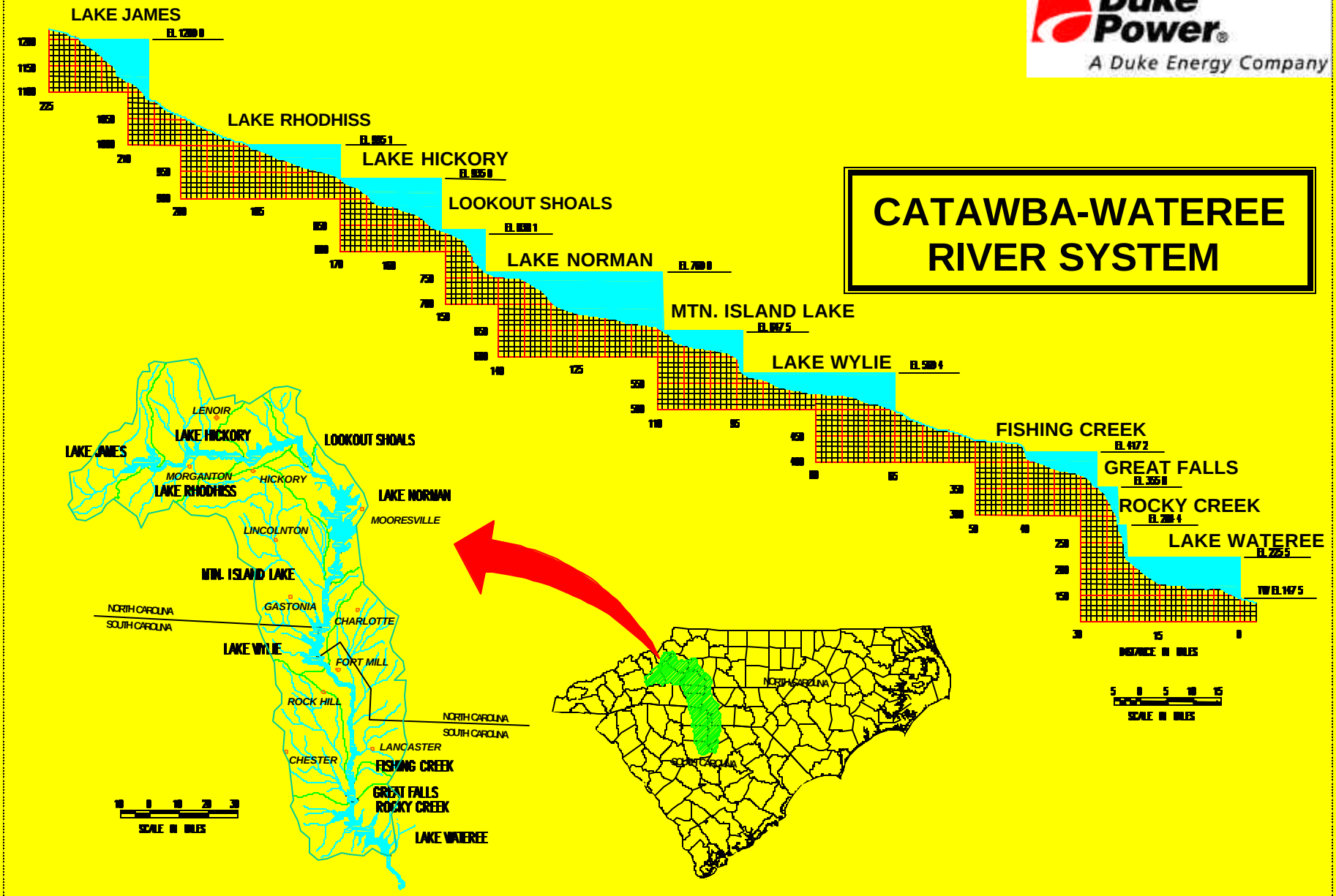
- Research and Gather information
- Create plan
  - Where would you want to be if the forecast is right on Jan 1?, July 1?
- Train staff
- Implement plan into daily, weekly operations
- Communicate internally the business impact of the changes
  - Can be a difficult sale when planning early intervention
- Using the tools available today to confirm the forecast, communicate externally and identify minimum requirements downstream
- Flexibility -- Stay current with the dynamics of change in weather, system operation and public needs, adjust plan

General Approach to Hydro Operation in a Drought

- Objectives:
  - Provide adequate water supply for all essential water needs including industrials and Duke.
  - Support all other needs, including recreation, as long as possible
  - Store water when possible, This requires the flexibility to save what Nature gives us when it is received and start being very conservative in it's release before it's gone. All storage will be used when needed
  - Communicate with all users to conserve
  - Optimize, not maximize, power production
    (Water has got to last until drought is over)


LAKE JAMES
LAKE RHODHISS
LAKE HICKORY
LOOKOUT SHOALS
LAKE NORMAN
MTN. ISLAND LAKE
LAKE WYLIE
FISHING CREEK
GREAT FALLS
ROCKY CREEK
LAKE WATEREE
CATAWBA-WATEREE
RIVER SYSTEM
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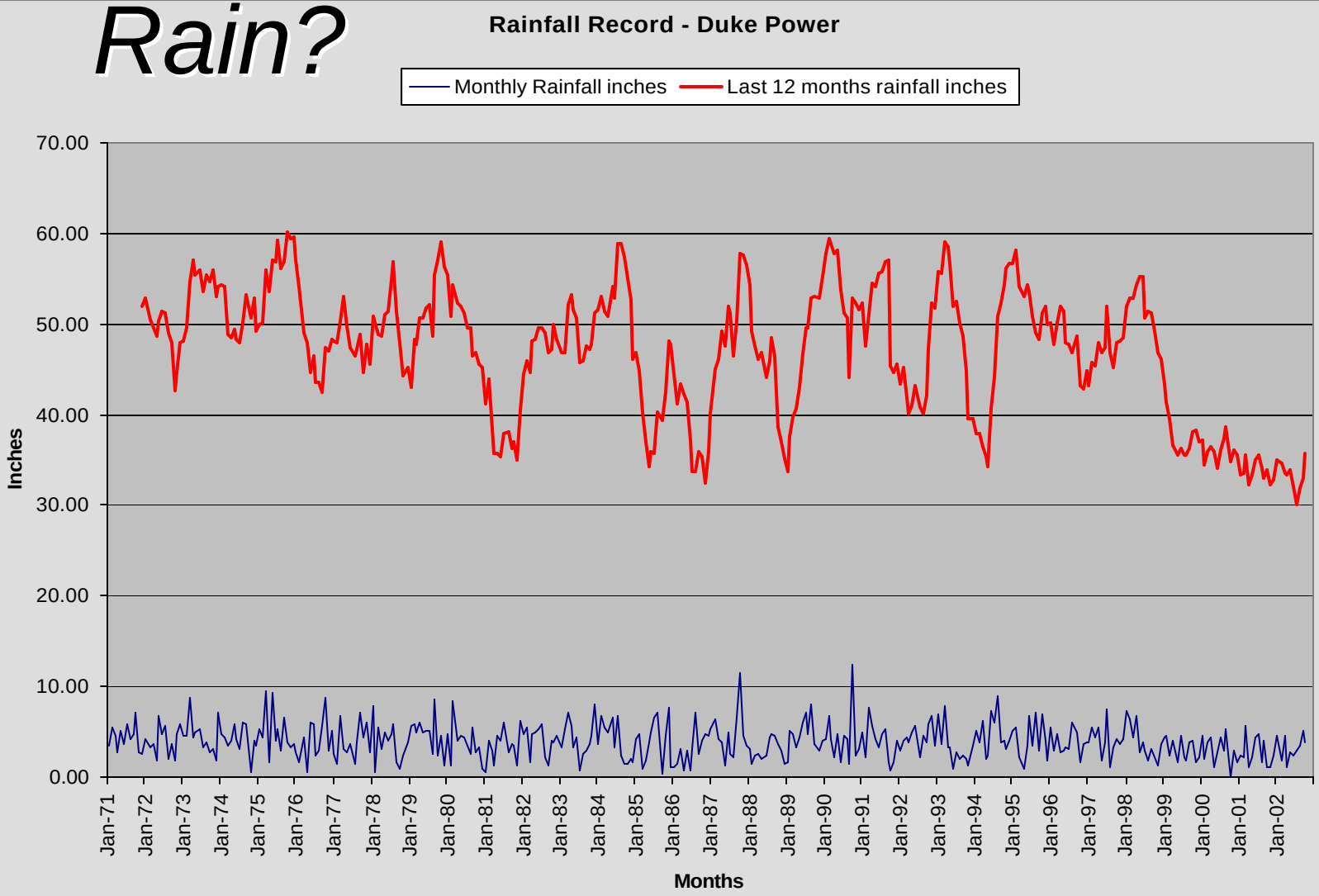
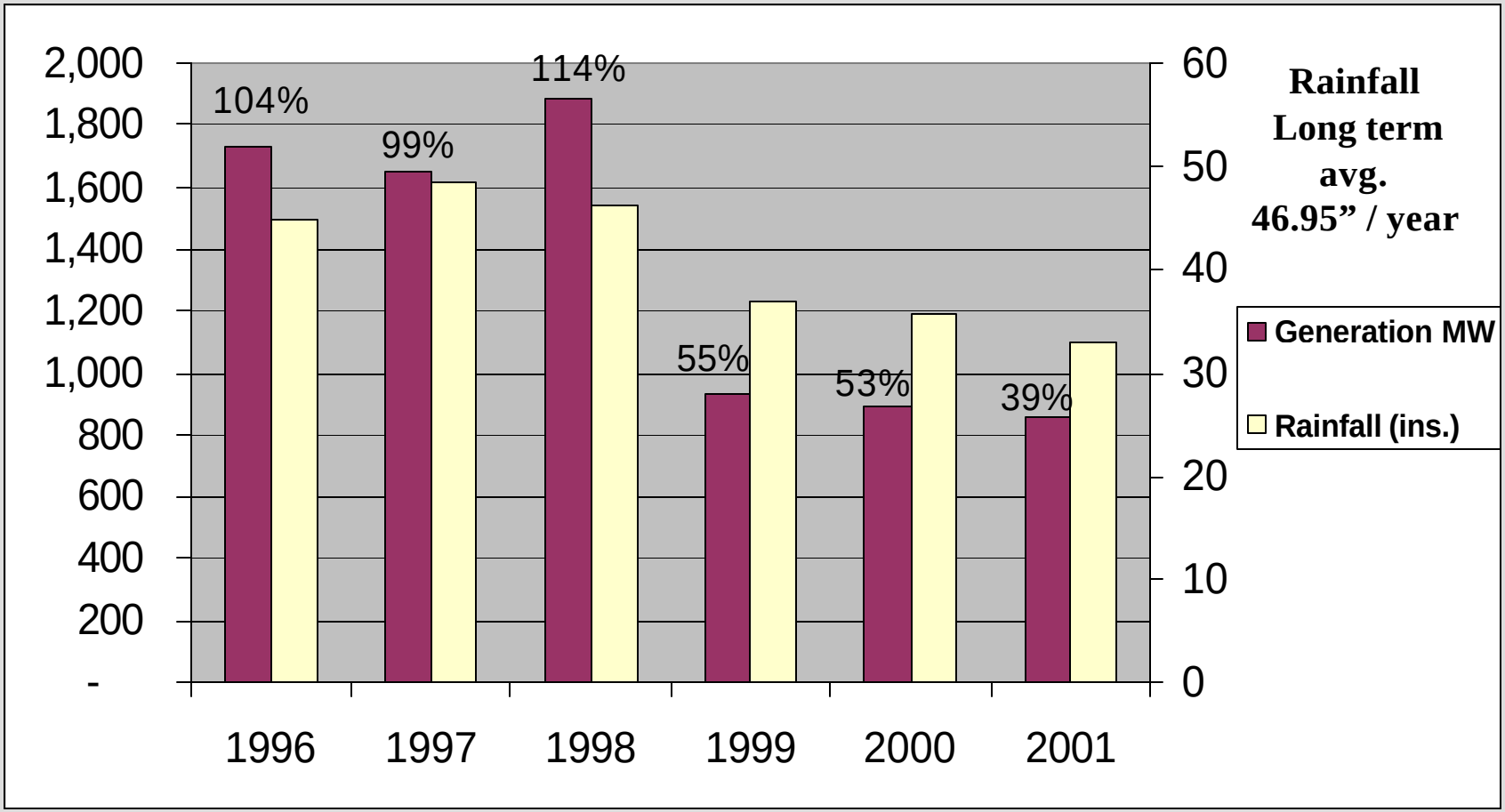
LENOIR
MORGANTON
HICKORY
LINCOLNTON
MOORESVILLE
GASTONIA
CHARLOTTE
FORT MILL
ROCK HILL
CHESTER
LANCASTER
NORTH CAROLINA
SOUTH CAROLINA
SCALE IN MILES

Where's the Rain?

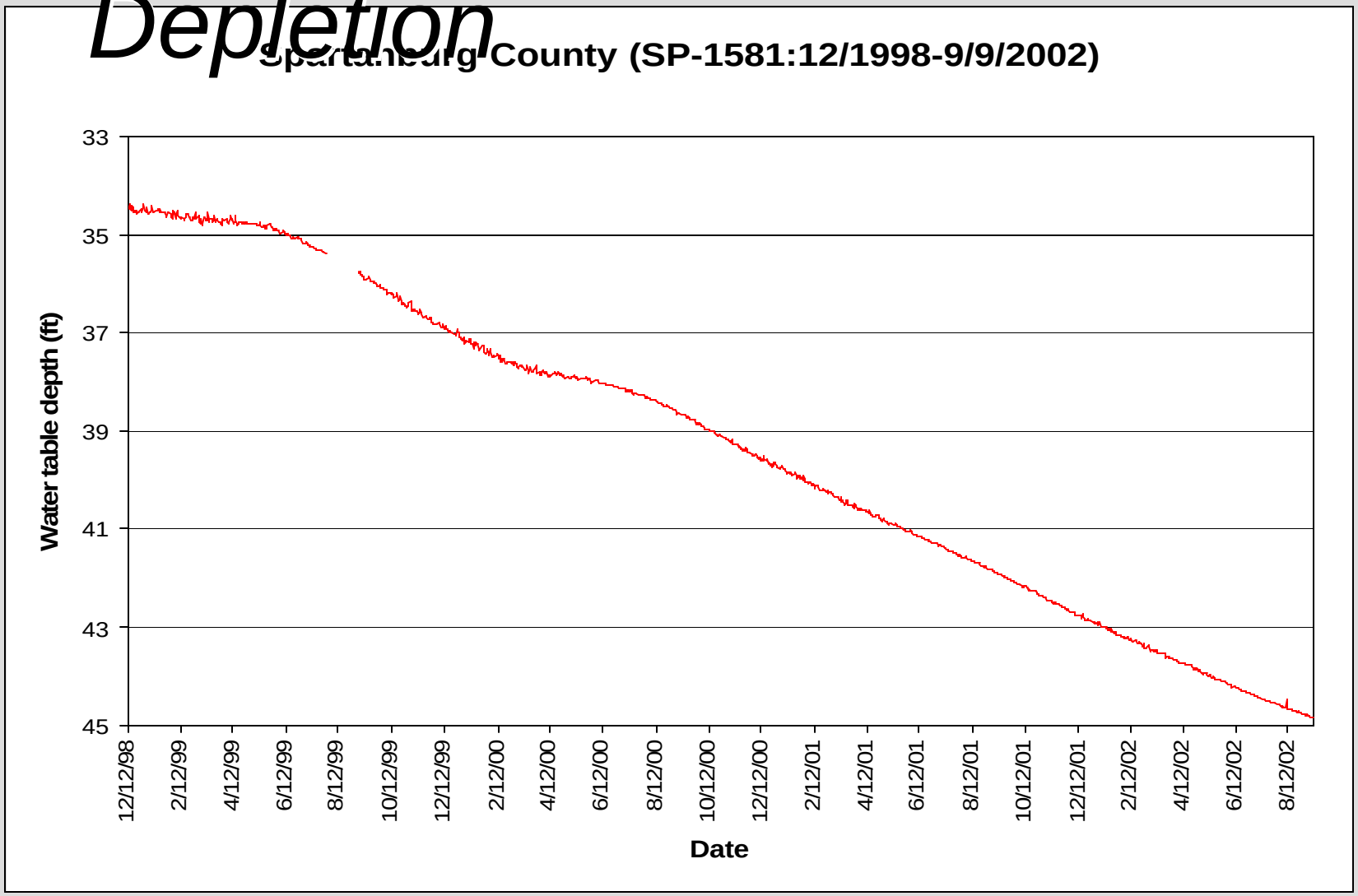


Hydro Reduction in MWh's to Conserve Water

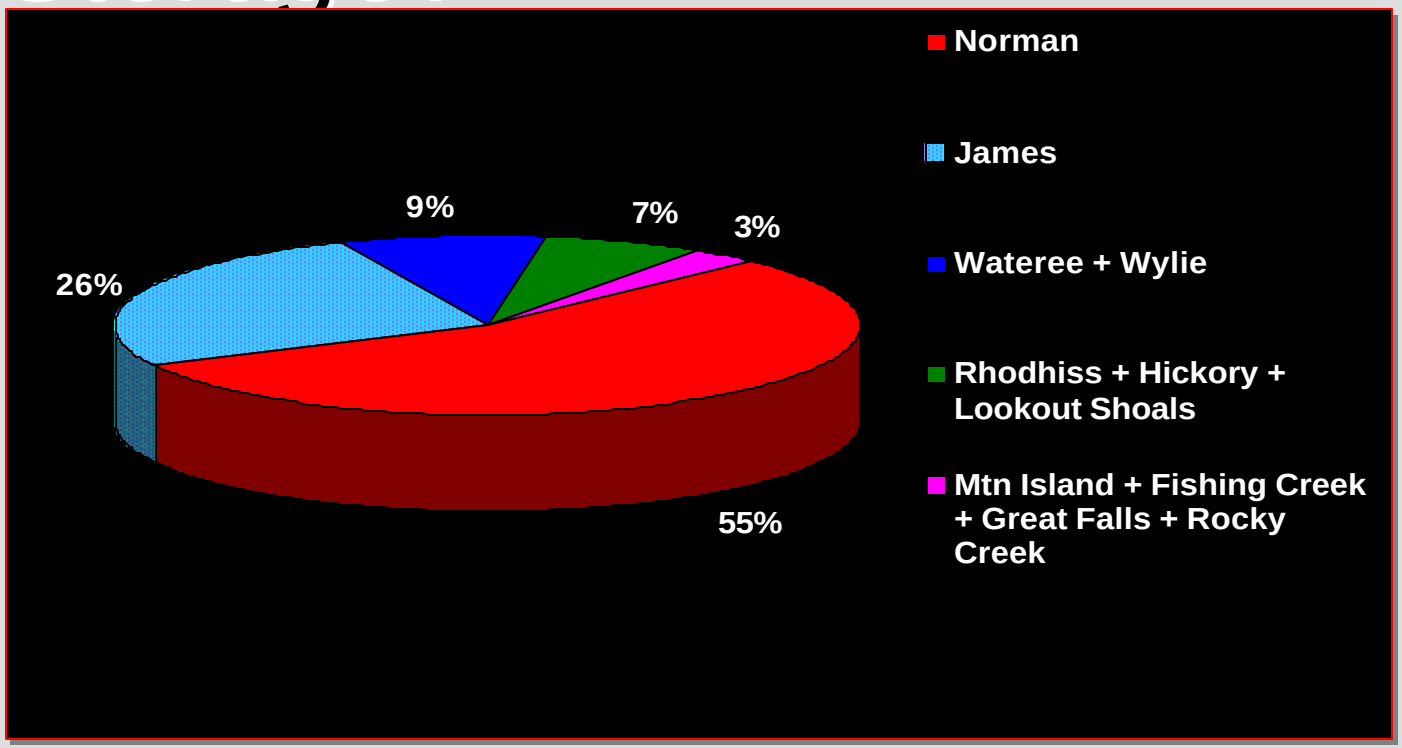
Conventional Hydro MWh's (~1.700 million LTA)



Water Table Depletion



Where Is the Storage?



Storage index:	79%	on	7/31/02
	67%	on	9/4/02
	65%	on	9/24/02
	68%	on	10/02/02
	79%	on	10/31/02

Tale of the Tape

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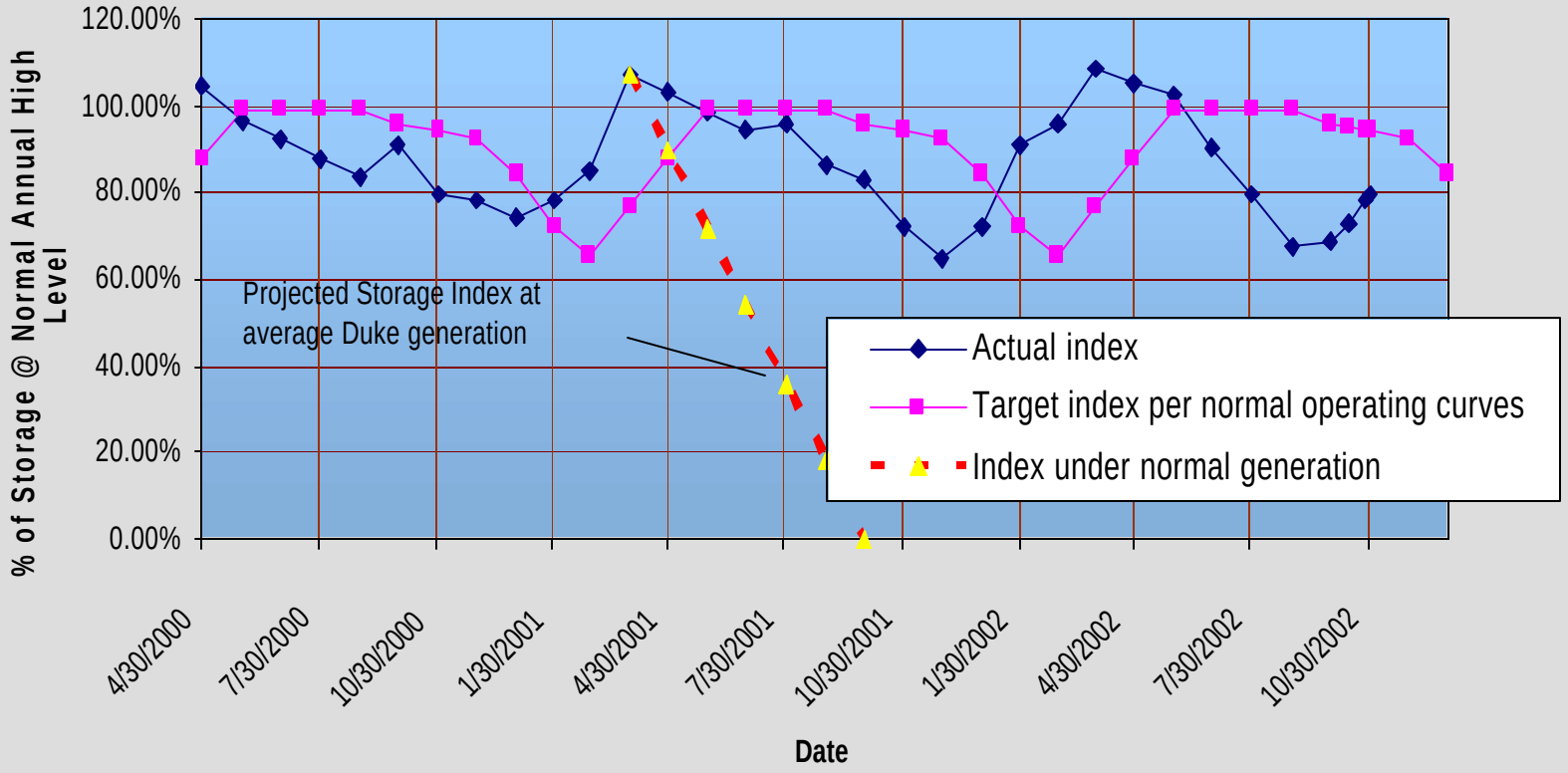
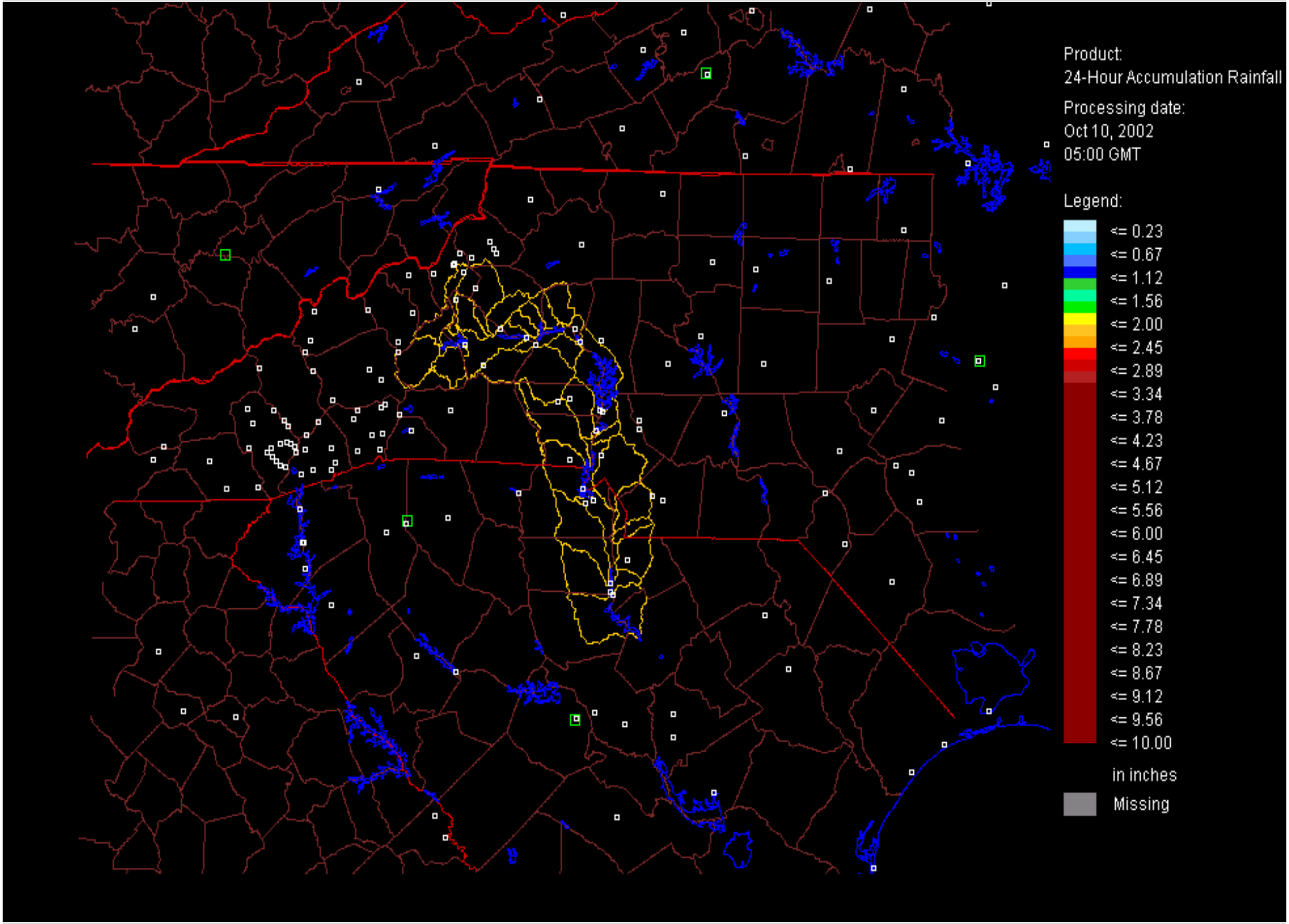
Catawba-Wateree Hydro Storage Index (HSI)
(Cumulative Index at Lake Wateree)
(Actual data through October 31, 2002)

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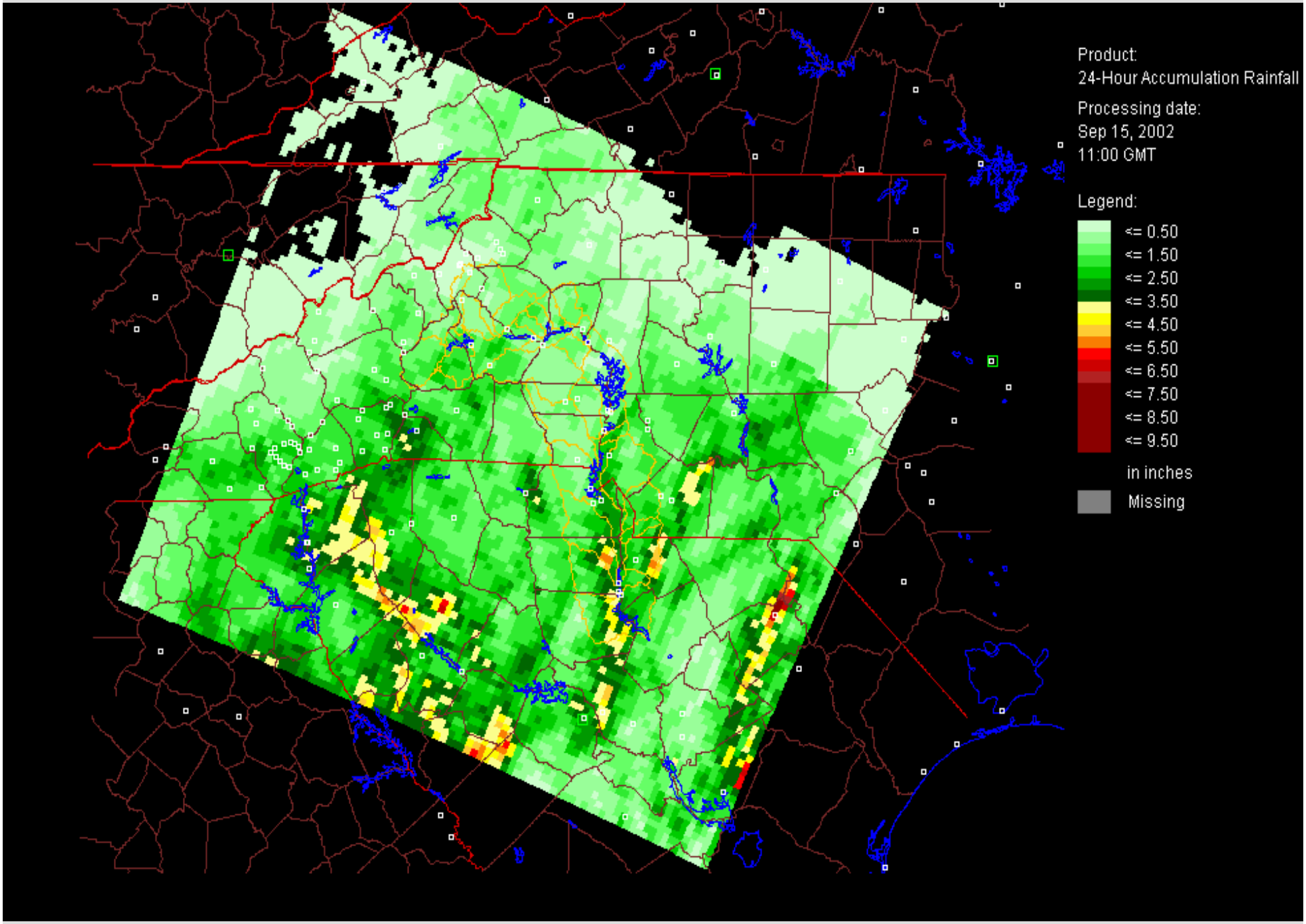
<= 0.67
<= 1.12
<= 1.56
<= 2.00
<= 2.45
<= 2.89
<= 3.34
<= 3.78
<= 4.23
<= 4.67
<= 5.12
<= 5.56
<= 6.00
<= 6.45
<= 6.89
<= 7.34
<= 7.78
<= 8.23
<= 8.67
<= 9.12
<= 9.56
<= 10.00
in inches
Missing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Sep 15, 2002
11:00 GMT
Legend:
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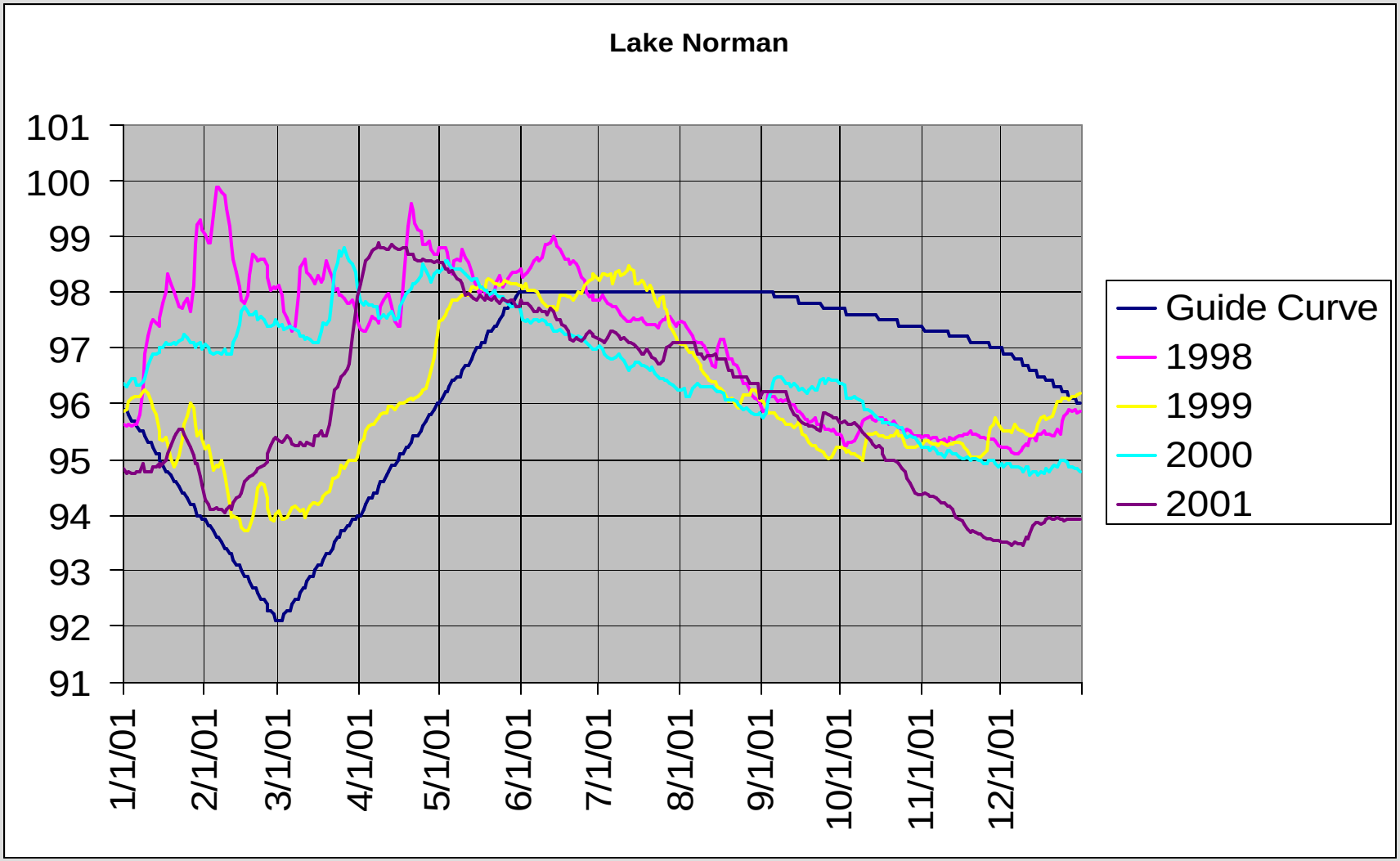
<= 2.50
<= 3.50
<= 4.50
<= 5.50
<= 6.50
<= 7.50
<= 8.50
<= 9.50
in inches
Missing

Storing When it rains



Availability, Benefits and Responsibilities Should Be Shared As Well

- Lake levels are still below where they should be for this time of year
  - Groundwater deficits must be restored before recovery will be sustainable
- Conservation at every level to preserve this precious resource for the future
- Does it really matter at this point? YES!
  - What if we had not started in 1998?
- What can we learn? Flexibility (storing water when it rains and reducing to minimum flows sooner in order to prudently manage a sustained drought)
- **It's time for all of us to learn NEW ways to conserve by reducing waste and finding other ways for water to be used more efficiently**

Summary

- Flexibility (early intervention – fall ‘98)
- Tools (NOAA, CPC, RPI, State and National Drought Councils)
- Education, Planning, Training
- Communication, media releases, workshops, community and business partnerships
- Conservation as a way of life for **us** and **future generations**. Our children have but one Question. What can we do to help?

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Questions?